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27	2.2
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34	1.3
35	2.3
35	3.3
39	4.3
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40	1.4

40	1.1.4
42	2.1.4
43	2.4
44	3.4
46	4.4
47	5.4
47	1.5.4
48	2.5.4
48	3.5.4
49	4.5.4
50	6.4
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46	(Scheffe)	11
47		12

55

59

73

75

77

79

91

**2013**

(40)

(70)

(6)

(%73)

(29.2)

(300)

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(0.80) 20-

(0.82)

.(%31)



**Abstract**  
**Constructing a Criterion – Referenced test to Measure Extent**  
**of High Studies Students Mastery for Scientific Research**  
**Competencies in Mu'tah University**

**Hanan Saleh Al- kasasbeh**

**Mu'tah University, 2013**

This study aimed to construct a criterion – referenced test to measure extent of high studies students mastery for scientific research competencies in Mu'tah university. The test, with its final form, consisted of (40) multiple choice items. It was applied on a (70) students' experimental sample of both genders, to verify difficulty and discrimination coefficients for the items. Test items were approved according to these coefficients. Then, test was viewed by (6) specialized judges to verify cut off score using Angoff method which is (29.2) (i.e 73%). After that, a test was applied on the whole sample which consisted of (300) student of both genders. Reliability coefficient was estimated using Kuder Retchardson -20 coefficient which was (0.80) to be used to estimate Livingston reliability at the degree of a cut-off score which was (0.82).

Results showed that: There were no statistically significant differences in competencies possessing degree, due to gender, while, there were a statistically significant difference in competences possessing degree, due to scientific degree, to the favor of doctorate, then, master, followed by diploma degree, While, there were no significant of the two variables interaction on Competencies possession .And also results showed that there was a clear depression in high students mastery for scientific research competencies in Mu'tah university, to say that the percent of the mastering students who exceeded the cut- off score is (31%) .

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.(Cut- off-score)

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## 5.1

:(Criterion- Referenced – Test )

.(2006 )

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:(Mastery)

( 1986 )

:(Competency)

(1998 ).

:(2001 )

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**6.1**

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.2014/2013

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**1.2**

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: (2004 )

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(2008 )



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**(Steps of Scientific Ressearch)**

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.(2002

(Ethics Researcher )

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(2009 ).

(2010 ) .

.(2007 ).

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(Norm Referenced Test) .1

(Norm Group)

(2005 ) .

(2007 )

(Criterion Referenced Test) .2

%50

(2002 ) .

.(2010 ) .

(Berk, 1982)

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(Contant Domaine) .2

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1969 (Popham James)

1971

N.Grounlund .

1978

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(2007

(Glaser)

1983

Mastery )

(Learning

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(2009 ) .

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(Grounlund,1973)

(Popham, 2000)

(Wikstrom ,2005)



(Nitko, 1980)

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(Order Domains)

.1

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(Unordered Domains)

.2

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:(Mastery Tests)

.1

(2007 ) .

:(Objective Referenced Tests) .2

(2004 )

(Popham ,1978)

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:(Domain Referenced Tests) .3

(2007 ) .(

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(Cut- Off Score)		.5
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	.(2002 )	
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<b>Item Difficulty</b>		<b>.1</b>
	(100)	(1-0)
(0.75)		(75)
(%75)		
	(1)	
.(2007 )		( )

Item sensitively .2

(Cox & Vargas)

$$S = P_{\text{post}} - P_{\text{pre}}$$

$$S = \frac{P_{\text{post}} - P_{\text{pre}}}{1 + \frac{P_{\text{post}} - P_{\text{pre}}}{2}}$$

(Brennan)

Cut )

$$S = \frac{U}{n_1} - \frac{L}{n_2}$$

(C) (– off- Score

$$S = \frac{U}{n_1} - \frac{L}{n_2}$$

(2004 )

:

:

(Validity)

(2010 )

(2009 )

(Descriptive Validity)

(Empirical Validity)

(Functional Validity)

(Domain Selection Validity)

.(Generalizability)

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(2007 )

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(1995 )

(popham, 1978)

phopham  
(Indictor)

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(2001 )

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(Hambleton, 1978)

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## (Index- Livingston)

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$$K^2(X,T) = \frac{\sigma^2_x (KR - 20) + (\mu_x - n_i c)^2}{\sigma^2_x + (\mu_x - n_i c)^2}$$

:

:K<sup>2</sup>(X,T)

:X

(C)

:T

C

:μ

:ni

20 -

: KR-20

(Crocker & Algina 1986.)

:C

### **Brennan & Kane Dependability Coefficient**

Brennan & Kane

( Generalizability )

Coefficient

(1995 ) .(Criterion)

	:
	:
	:
:	<b>1</b>
<b>(Method Harris)</b>	
(Harris, 1974)	
	(K)
( )	
	(Mc)
$Mc = \frac{SSb}{SSw+SSb}$	:
	:Mc
( )	:SSw SSb
(Huynh Kappa Coefficient)	
:	
. (Beta Distribution)	-1
	-2
	-3
(2007 ) .	-4



.2

(Carver Method)

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$$\frac{A+D}{N}$$

:

:A

:D

$$N= A+B+C+D$$

(2007 ) .

(Coefficient Kappa) :

(1995 )

$$(1+ 1-)$$

(K)

:

$$K = \frac{P-Pc}{1-pc}$$

:

:K

:P

: Pc

(Cut- Off Score)

(Hambleton, 1978)

( )

" (Halpin,G,Sigmon,1983)

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(Passing Score)

(Mastrey Level)

(Criterion Level)

(Minimum Competency Level)

(2009 ) (Cut Of Score)

:

(Judgmental Methods)

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(NedleskyMethod)

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(Ebel Method)

(Angof Method)

(2007 ) (Jaeger.Method)

(Shepard,1984)

: (2009 )

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(Empirical- Judgmental Method)

:  
(Borderline Groups)

(Criterion Groups)

(Berk,1982) (Contrasting Groups)

(Judgmental-Empirical Method)

(2007 ) .

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(Jonthan, 1991)

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(Guziano, 1995)

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(1984)

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(Mac & Themes, 1996)

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 $t_{(72, 0.05)} = (7.035)$   
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 (34) (98)  
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(Dale, 1995)

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(0.78)  
(0.96)  
(0.85)

(0.69)

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(2011 )

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 (77) ( : (7)

Spss

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 (.63)

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 (Jonthan, 1991) ( Guziano, 1995 ) (2011

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.(Dale, 1995)

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**1.3**

: (883) 2014 / 2013  
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**(1)**

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28	20	8
775	355	420
80	27	53
883	402	481

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2.3

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26	18	8
238	120	118
36	14	22
300	152	148

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(15)

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(6)

3.3

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(15)

(36,30,24, 10)

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-6

(70)

(3)

(3)

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0.48	0.70	21	0.29	0.87	1
0.32	0.64	22	0.41	0.67	2
0.42	0.54	23	0.36	0.59	3
0.27	0.57	24	0.35	0.54	4
0.51	0.49	25	0.30	0.60	5
0.30	0.70	26	0.39	0.61	6
0.42	0.53	27	0.54	0.49	7
0.52	0.74	28	0.41	0.63	8
0.27	0.61	29	0.37	0.73	9
0.33	0.67	30	0.37	0.53	10
0.43	0.54	31	0.27	0.90	11
0.30	0.69	32	0.33	0.46	12
0.30	0.67	33	0.56	0.60	13
0.42	0.59	34	0.23	0.66	14
0.37	0.63	35	0.47	0.64	15
0.48	0.81	36	0.34	0.63	16
0.52	0.70	37	0.30	0.84	17
0.42	0.70	38	0.29	0.57	18
0.65	0.46	39	0.31	0.60	19
0.33	0.57	40	0.39	0.46	20

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(0.46) (0.90) (3)

(0.65) (0.23)

( ) (0.20)

(4) (40)

(4)

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20%	8
15%	6
42.5%	17
22.5%	9
100%	40

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:(cut- off score)

-7

(Angoff method)

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40

2014\2013

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(40)

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Spss

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**4.3**

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(Angoff Method)

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(KR-20)

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(Livingston Index)

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(Tow-Way Anova)

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(Scheffe)

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0.78
0.82
0.87
0.80
0.82

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( 0.78 )

(5)

(0.87)

( 0.82)

:

(Livingston index)

$$K^2(X,T) = \frac{\sigma_x^2 (KR - 20) + (\mu_x - n_i c)^2}{\sigma_x^2 + (\mu_x - n_i c)^2}$$

:

: $\sigma^2$

: $\mu_x$

: $n_i$

:C

(2009 ) 20 –

:KR – 20

KR -20

$$KR - 20 = \frac{n}{n - 1} \left[ 1 - \frac{\sum pq}{S^2} \right]$$

. :n

. :p

.1-p :q

: $S^2$

$$KR - 20 = \frac{40}{39} \left[ 1 - \frac{5.86}{26.23} \right]$$

= 0.80

$$K^2(X,T) = \frac{26.23 (0.8) + [ 27.4 - 40 * 0.73 ]^2}{26.23 + [ 27.4 - 40 * 0.73 ]^2}$$

= 0.82

(40)

(Varimex Rotathion)

(6) (Stevens, 1996) (0.30)

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(6)

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4	3	2	1	4	3	2	1	
	0.69			21			0.39	1
	0.60			22			0.63	2
	0.63			23			0.66	3
	0.63			24			0.64	4
	0.61			25			0.69	5
	0.72			26			0.42	6
	0.63			27			0.68	7
	0.71			28			0.50	8
	0.73			29		0.69		9
	0.69			30		0.76		10
	0.63			31		0.76		11
0.57				32		0.74		12
0.70				33		0.74		13
0.50				34		0.71		14
0.68				35	0.46			15
0.63				36	0.52			16
0.69				37	0.59			17
0.64				38	0.57			18
0.53				39	0.62			19
0.46				40	0.60			20

(6)

(0.30)

(7)

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(7)

17.29%	17.29%	8.3 6
26.69%	9.40%	4.03
36.07%	9.38%	3.36
44.73%	8.66%	2.20

(7)

(17.29 %) (8.36)

(9.40%) (4.03)

(3.36)

9.38%))

(8.66%) (2.20)

(44.73)

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(8)

		6	5	4	3	2	1
6	36	5	7	5	7	6	6
4.7	28	4	5	4	4	6	5
11.5	69	12	15	12	13	7	10
7	42	6	8	6	6	8	8
29.2	175	27	35	27	30	27	29

(8)

(73%)

(29.2)

(40)

3.4

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Two way

Anova

(9)

(9)

5.17	24.83
3.64	26.43
3.54	31.14
6.14	22.38
3.67	27.06
3.99	31.23

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(10 )

(10)

### Two way Anova

F				
0.42	0.65	9.722	9.722	1
0.00	29.27	434.99	869.98	2
0.196	1.64	24.39	48.79	2
		14.864	4370.004	294
			5298.496	299

0.65 F (10)

F ( $\alpha \leq 0.05$ )

( $\alpha \leq 0.05$ ) 29,27

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1.64

F

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: (11) (Scheffe)  
(11)

0.02 -2.87
0.00 - 7.23
0.00 - 4.45

(11)

( $\alpha \leq 0.05$ ) (-2.87)  
(-7.23)

(-4.45)

: 4.4

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(29.2)

(12)

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19%	21	5
24%	180	58
81%	7	29
31%	208	92

19%	(12)
%81	24%
	.31%
	<b>5.4</b>
	<b>1.5.4</b>
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	:
(.80)	20 –
(0.78)	
	(0.82)
	(0.87)

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(44.73)

(2.20)

(8.30)

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**2.5.4**

27,35,27,30,27,29

(29.2)

(73%)

(70%)

(28)

(Angoff Method)

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**3.5.4**

0.65 F

( $\alpha \leq 0.05$ )

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**4.5.4**

(19%)

(24%)

( 81%)

(31%)

**6.4**

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